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**Cutting
the
cost**



Canada

FISHING FOR PROFIT • No.1

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Cutting the cost



Canada

Running a profitable operation

This brochure has been provided as an aid to fishermen. Its purpose is to make your fishing operation more profitable. Read it carefully; the tips included may help you save time, trouble, fuel and expense.

Although this brochure was produced for the benefit of fishermen in Newfoundland and Labrador, the advice contained in this publication is also applicable to fishermen in other areas of Canada.

Should you require more information, or have some cost-cutting suggestions, we would be pleased to hear from you.

Fisheries Development Branch
Department of Fisheries & Oceans
Newfoundland Region
P.O. Box 5667
St. John's, (Newfoundland)
A1C 5X1
(709) 772-4438

Fisheries Development Branch
Department of Fisheries & Oceans
Scotia-Fundy Region
P.O. Box 550
Halifax, (Nova Scotia)
B3J 2S7
(902) 426-8110

Fisheries Development Branch
Department of Fisheries & Oceans
Gulf Region
P.O. Box 5030
Moncton, (New Brunswick)
E1C 9B6
(506) 758-9044

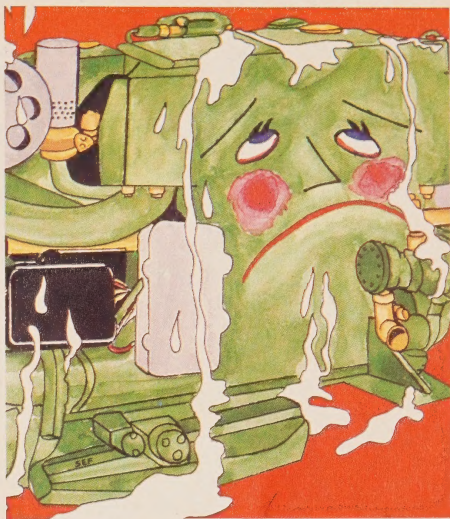
**LES TEXTES SONT
DISPONIBLES EN FRANCAIS
SUR DEMANDE.**

Ways to Cut Your Costs... and Increase Your Profits!

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**THROTTLING
BACK**



**ENGINE SIZE &
MAINTENANCE**



**PROPELLER SIZE
AND SELECTION**



**HULL CLEANING
AND MAINTENANCE**

Throttle back... you don't have money to burn!

Fishermen are in business for themselves. They have income and expenses. One way to stay in business is to increase income and cut expenses. Today a big fishing expense is fuel. Let's look at some ways we can cut this cost.

The fact is most vessels operate best with the throttle about $\frac{3}{4}$ open. Beyond this point, it takes a lot of power to give a little extra speed.

Eg#1 A 40 ft. longliner might use 55 H.P. to get a speed of $7\frac{1}{2}$ knots. To increase its speed by just 1 knot, the H.P. must double from 55 to 110.

Eg#2 The same craft at $7\frac{1}{2}$ knots will burn 9 gallons of fuel in a 25 mile run. She will make the trip in 3 hours 20 minutes. By increasing the speed 1 knot, the skipper will save 24 minutes. However, he will burn 18 gallons of fuel. *Twice as much! Is it worth it?*

These costs vary with the size of the vessel and the distance travelled. A 110 ft. vessel on a 500 mile run would save 1000 gallons of fuel by cutting back from 12 to $10\frac{1}{2}$ knots.

So, what's more important—time or fuel bills? Only the fishermen on the spot can make that decision. But it's good to know the real cost of "revving up".

Let's look at some of the facts.

- Idling wastes a lot of fuel. If you don't need to turn her over, shut her down, you're burning money.
- Diesel fuel is cheaper and favoured by most fishermen in the province, while gasoline is on the way out for the larger vessels, but the gasoline driven outboards are hard to beat in the small boat fishery, when simply getting to the lobster or salmon areas in a hurry is a big part of success.

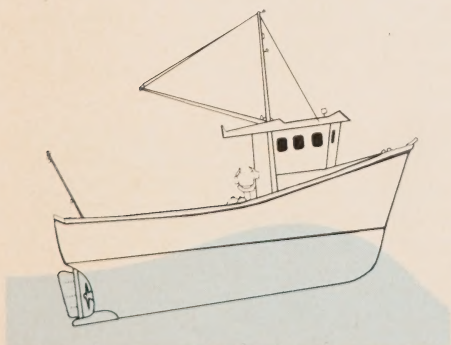
But they're all gas guzzlers! No question about it—even when maintained and operated properly. So, whether your engine is large or small, keep her at $\frac{3}{4}$ throttle, and see how much money you save. It may surprise you.



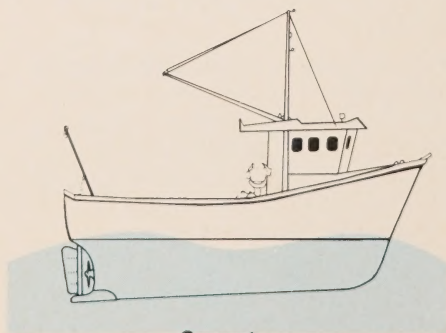
Here are some ways to help your boat ride the waves for better speed, comfort, safety and fuel economy:

Remember to keep in mind the relationship of speed to wave profile. If the bow wave "dips" aft so that the vessel squats in the water, you will be losing power, as well as time, fuel and money.

Cut weight whenever possible. Reducing the weight of your vessel by 10% will reduce your fuel consumption by 5 to 10%. So, take a long, hard look at excess weight.



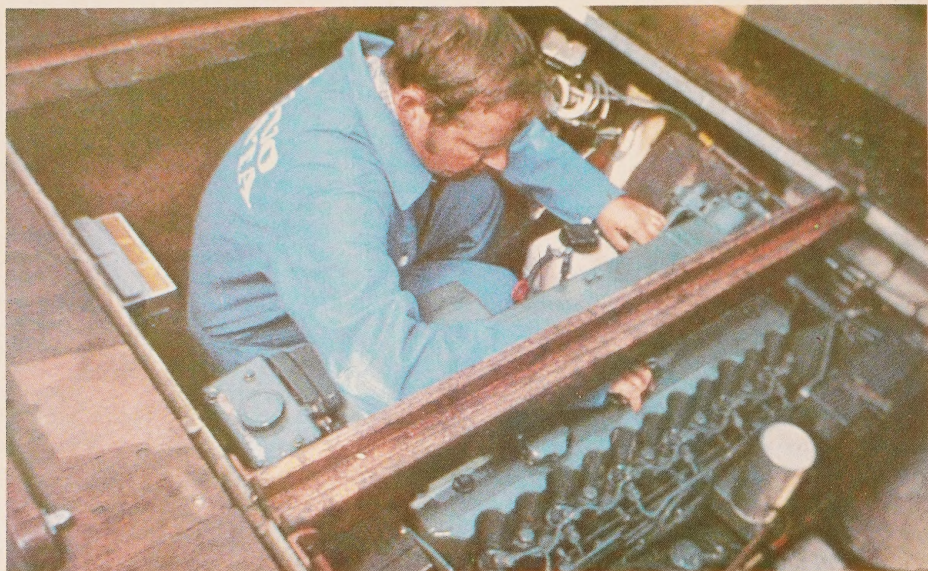
Incorrect



Correct

Engine size and maintenance

...getting down to basics



Maintenance

The power plant is the heart of your vessel; it must not be abused. It must be correctly maintained and properly tuned. The injectors should be overhauled regularly and replaced if and when necessary. Let's not forget the basic stuff; regular oil and filter changes are required. It's startling the amount of fishing, fuel, time and money lost by those who neglect their engines, forget the basics, or ignore the manufacturer's handbook.

Many longliners have large engines that receive insufficient ventilation. This causes them to run hot, and therefore perform inefficiently. Remember, a diesel engine requires 2½ cubic feet of cool, clean air, per minute, per horse power.

Size and Service

Breakdowns will happen occasionally, no matter how much care was taken in the selection and maintenance of the engine. When buying an engine, check the dealer out. What sort of reputation does he have for after sales service? Does he stock suitable spare parts? If any doubts occur, consider other companies. It could save you a lot of down time, and improve your profits. Millions of dollars worth of fishing time have been lost while fishermen waited for parts and service to arrive.

One of the most important decisions a fisherman must make is choosing the correct engine for his boat. The answer to this question depends on how much power you really need for where and how you fish, and on the size and design of your vessel.

It's always interesting to note, however, that extra H.P. does not always mean greater speed. Maximum speed depends almost entirely on the vessel's length at the waterline. In effect, a 64-foot Newfoundland type longliner won't go much faster than 10.7 knots, no matter what size engine you put in her.
(Speed = $1.34 \times \sqrt{\text{length}}$)

New and interesting ideas!

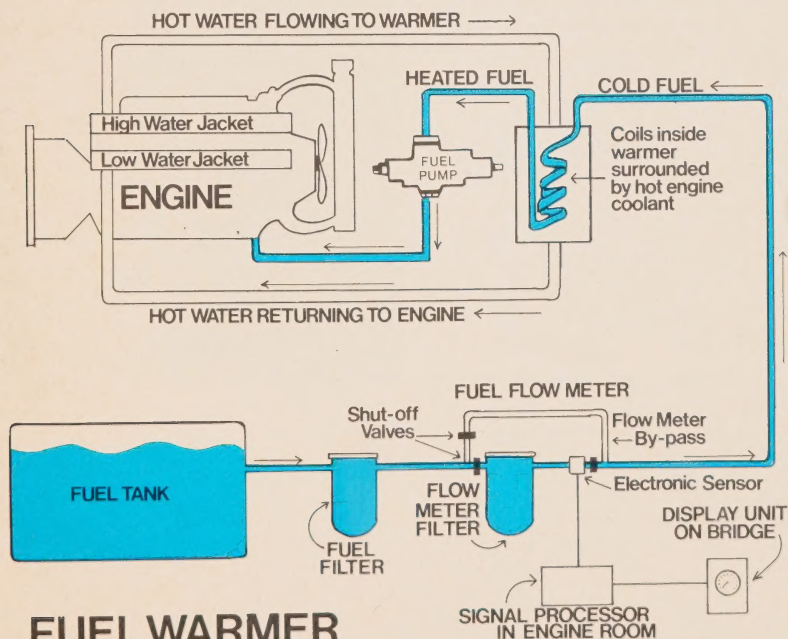
Rising fuel costs have increased the need for new products which save fuel and improve performance.

For instance, fuel flow meters; they will show the relationship of H.P. to fuel consumption. Fuel heaters are

now available in the province. They eliminate winter gelling, and provide more efficient engine combustion. One manufacturer guarantees a 10% saving in fuel. Experiments are now underway to see how well these fuel warmers work under Newfoundland conditions. Some of our inshore draggers burn up to \$30,000 worth of fuel yearly. A fuel warmer could bring worthwhile savings for them.

Variable pitch propellers with blades that can be angled in any direction, also the two pitch propeller, (one pitch for greater thrust, the other for better speed) are available and useful in some fisheries.

Nozzles— casings fitted around the propeller—allow the water to be channelled in the proper direction. Used effectively by inshore draggers, the vessels have more power when towing a net. However, a slight loss of speed is felt when steaming.



Propellers... the right size means more power!

As mentioned previously, the design of your vessel must also be considered, particularly the stern section and the size of propeller it can take. It's pointless getting a big engine if you can only fit a small propeller to the stern.

Most Newfoundland longliners were originally designed for line fishing, and therefore did not require a great deal of power. As a result, you cannot properly fit a large propeller to most longliners with the smaller propeller aperture. When you install a propeller that's too small and not compatible with the power plant, it can cause some problems. Problems like CAVITATION, the eating away of the metal by water when too small a propeller is used. Needless to say, it's hard on the blades. It also means inefficient engine operation; so your boat will lack the power and thrust you need.

When fitting a propeller, bear in mind the lines of the boat; try to streamline as much as possible, paying particular attention to the stern posts. Some fishermen and builders have found quite a difference when they *fair away* stern posts that are wide and square. This helps correct the flow of water through the propeller and gives better handling and fuel economy.

Engine, propeller and hull shouldn't be considered separately. They must all match and work together for you to get the most out of your investment, while delivering maximum power, speed and efficiency.



The hull... keeping it shipshape!



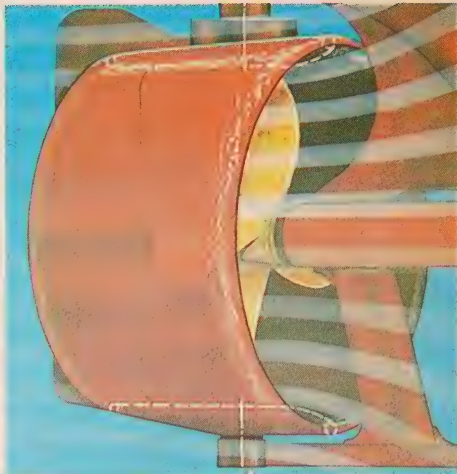
The hull is the strength of your vessel; take good care of it for it takes a lot of punishment. There will be rot and abrasion from ice and wharves, as well as other boats. Your vessel will gradually settle deeper as it absorbs sea water. All these effect your fuel efficiency and your pocket book.

Dirty bottoms—it can mean a lot. It can cost dollars; it can shorten the vessel's life and increase your fuel bills.

Fungi and salt water worms will attack the hull. Barnacles, kelp and mussels will all hitch rides. It's amazing how underwater passengers will slow you down. One fisherman has calculated that a 45 minute run across the bay in the spring, takes over an hour in the fall when his vessel's bottom is dirty.

Scrape and clean the hull every year, and then apply an anti-fouling paint. This seals the wood. It also discourages marine growth and helps prevent marine worm attacks. If your vessel is new, apply a hull coating. Sure, it's expensive stuff, yet well worth it, if you want your boat to last. Remember, getting that extra year or two of service out of your boat is a big saving in itself.





Research for the future ...finding alternatives

The way costs are rising, fishermen must keep an eye to the future and become aware of new trends, investigate new ideas to make and save money. Naval architects, ship builders and fishermen worldwide have joined in the battle to save energy and reduce operating costs. Some feel we must review the past and even predict a return to coal and steam for larger vessels in the future. Others advocate a partial return to sail.

The future or the past; it doesn't really matter where we get our ideas. The important thing is to make proper use of them to get a better living from the sea around us.

With today's limited natural resources and strict quotas, catching more fish may not provide the answer. However, one way to make money is to cut back on costs. We've shown you many ideas you can use now.

But this is just the beginning—the Department of Fisheries and Oceans has now launched an ongoing, fact-finding program. We are gathering information on fuel consumption, vessel and engine efficiency, testing new products, and finding more ways for every fisherman to cut expenses and save money.

We welcome the comments and ideas of everyone, everywhere, who is involved in making the fishery a success. You are invited to join us now in the fight against rising energy costs. ***This is a battle none of us can afford to ignore, and one we must all win.***

Notes



Fisheries
and Oceans

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